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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,626	10/29/2003	Bala Ramachandran	03SKY0003	5553
24504	7590	01/26/2005	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			WONG, LINDA	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,626

Applicant(s)

RAMACHANDRAN ET AL.

Examiner

Linda Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because
 - a. Figures 4 and 5 should contain labels. For example, the filters located between the duplexer and LNA should contain numbered labels as shown in Fig. 2.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
 - a. On page 8, paragraph [0023], line 20, the label 220 is mentioned to be equivalent to VGA. In Fig. 2, 220 is indicated to be a filter. It is suggested that the term "220" be changed to "230", as indicated in the diagram.
 - b. On page 13, paragraph [0035], line 2, the term FIR should include the equivalent long written out term.

Appropriate correction is required.
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: In **Claims 2, 14, and 22**, the term "global satellite mobile communication" was not mentioned within the specification.

Claim Objections

4. **Claim 31** is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent: claims 32 and 33. See MPEP § 608.01(n). Accordingly, the claim 31 has not been further treated on the merits.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claim 1, 5, 8, 9, 11, 12, 16, 18, 20, 21, 25, 26, 27** are rejected under 35 U.S.C. 102(b) as being unpatentable by Shi et al. (US Patent No: 6332083 B1)
 - a. **Claim 1, 8, 11, 20**, Shi et al disclose a multi-mode receiver comprised of a baseband section (labels 56, 58, 46, and 78), which converts a first and second signal to a first and second baseband signal (label 164) and a processor (label 166) that processes the first and second baseband signal. (Fig. 1 and Fig. 10) Shi et al's multi-mode receiver inherently receives and processes a plurality of signals.
 - b. **Claims 5, 16, 25**, Shi et al disclose a multi-mode receiver that processes modes at different frequencies, wherein each mode inherently has different frequency response characteristics. (Fig. 5, and Col. 8, lines 45-67)

- c. **Claims 9, 18, 26**, Shi et al disclose a multi-mode receiver that uses different sampling rates for each mode. Since each mode is processed at different frequencies, the sampling rates used within analog-to-digital converter would vary to accommodate the Nyquist theorem. (Fig. 5, Col. 8, lines 45-67, and Fig. 2, label 58)
- d. **Claim 12**, Shi et al disclose a down-converter that converts a first signal to a first baseband signal and a second signal to a second baseband signal. (Fig. 2, label 46)
- e. **Claim 21**, Shi et al disclose a means for transmitting, in the form of an antenna, and receiving signals, wherein the received signals are preconverted. (Fig. 1, labels 36 and 38) Claim 21 inherits all the limitations of claim 1.
- f. **Claim 27** inherits all the limitations of claims 1 and 21.

Claim Rejections - 35 USC § 103

- 6. **Claims 2, 3, 4, 6, 7, 10, 13, 14, 15, 17, 19, 22, 23, 24, 29, 30, 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al (US Patent No: 6332083 B1) in view of Peterzell et al. (US Patent No: 6694129 B2).
 - a. **Claims 2, 14, 22**, Although Shi et al disclose only one type of mode, CDMA, recited within these claims, Peterzell et al disclose several functions recited within the claims: CDMA (label 70, CDMA), GPS (label 70, GPS), GSM (label 70, GSM), etc. (Fig. 3) It would be obvious to one skilled in the art to create one system that allows multiple wireless communication bands and modes to

function so that such systems can allow communication in areas where these functions are accessible.

- b. **Claim 3, 23**, Although Shi et al disclose only one item recited within the claim, a filter, Peterzell et al disclose several of the items recited within the claim: a filter, DC offset element corrected by the local oscillator (label RF PLL & VCO), analog-to-digital converter, amplifier (360A and 360B), and sampling (label Sample Clock = F_s). (Fig. 5) It would be obvious to one skilled in the art to build a system containing these components to eliminate interference and correct deficiencies within devices such as A/D converter.
- c. **Claims 4, 24**, Although Shi et al does not teach a processor with at least one of a digital domain and an analog domain, Peterzell et al disclose an analog domain and a digital domain. (Fig. 5, before ADC, domain is analog, after ADC, domain is digital) It would be obvious to one skilled in the art to provide an analog domain in which the received signal can be processed to eliminate interference and noise and a digital domain so that the signal can be transmitted.
- d. **Claims 6, 7, 10, 15, 17, 19**, Although Shi et al does not teach a processor with at least one LPF, FIR, and DC-offset correction element, Peterzell et al disclose an anti-aliasing filter, which can be LPF, BPF or APF (label 370A and B), a DC-offset correction element in the form of a VCO (label RF PLL & VCO), an analog-to-digital converter (labels 380A and B), a decimation filter in the form of a down-converter (labels 340A and B). (Fig. 5) It would be obvious to one

skilled in the art to build a system containing these components to eliminate interference and correct deficiencies within devices such as A/D converter.

- e. **Claims 13**, Although Shi et al does not teach two down-converters, Peterzell et al discloses two down-converters, one converts a first signal and the second converts a second signal to a first and second baseband signal, respectively. (Fig. 5, labels 340A, and B) It would be obvious to one skilled in the art to use a down-converter to lower the sampling rate and increase the frequency.
 - f. **Claims 29 and 31** inherit all the limitations of claim 7.
 - g. **Claim 30** inherits all the limitations of claim 7, but claim 7 does not recite an inclusion of switchable bandwidths within an LPF and DC-correction element. Shi et al disclose a multi-mode receiver that processes different modes with different frequency responses. (Col. 3, lines 42-45) Since each mode uses a different frequency, it would be inherent that the bandwidths use to process each mode must change. It would be obvious to one skilled in the art to include switchable bandwidths to follow the criterias of the Nyquist theorem, which would prevent aliasing.
7. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al (US Patent No: 6332083 B1) in view of Wildhagen et al (Foreign Patent No: EP 1 233 555 A1).
- a. **Claim 28**, Shi et al disclose a multi-mode receiver for CDMA having a common baseband system. Although Shi et al does not disclose a digital-broadcast

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system that shares the common baseband system, Wildhagen et al disclose a DBS system. (paragraph [0008]) It would be obvious to one skilled in the art to replace the TDMA mode disclosed by Shi et al with a DBS system disclosed by Wildhagen et al to provide a multi-mode receiver that can process a DBS and CDMA system.

8. **Claims 32, 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al (US Patent No: 6332083 B1) in view of Peterzell et al (US Patent No.: 6694129 B2) and further in view of Wildhagen et al (Foreign Patent No: EP 1 233 555 A1).
 - a. **Claims 32 and 33** inherit all the limitations of 7 and 10. Shi et al disclose a sampling rate for a CDMA system. Although Shi et al and Peterzell et al does not teach a sampling rate for a digital-broadcast system, Wildhagen et al disclose a digital-broadcast system with varying sample rate. (Abstract, lines 2-6) It would be obvious to one skilled in the art to build a receiver that allows the processing of a digital-broadcast system and a CDMA system and to use different sampling rates due to the type of signal coming to save energy and to provide a dynamic processing unit.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).





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